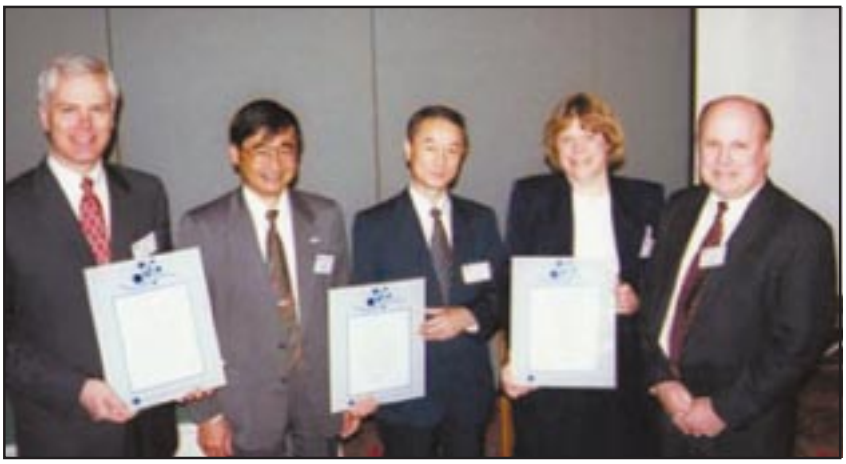
Materials and Manufacturing Directorate Earns International Award



Payoff

The Materials and Manufacturing Directorate's (ML's) selection for the American Chemical Society's (ACS's) "Global Salute to Polymers" award recognizes the invention and development of rigid-rod aromatic-heterocyclic polymer, polybenzobisoxazole (PBO) technology that has important application both in the military and the private sector. ML's selection for this coveted international award highlights the high degree of knowledge, professionalism and dedication of the men and women at the Air Force Research Laboratory (AFRL) and also honors the important role of ML in providing for the nation's defense and advancing technological innovation.

Accomplishment

AFRL's ML Directorate has been presented the 1999 "Global Salute to Polymers" international award by ACS. The award recognizes novel technologies, notable researchers and significant landmark sites where polymers were invented or developed. The award was presented at the 217th biannual meeting of the ACS, in Anaheim, CA, as part of the organization's "International Chemistry Celebration" intended to enhance public appreciation of chemistry and its contributions to everyday life. The program is also designed to promote better communications between chemical scientists and engineers around the world.

Background

Polymeric materials developed for use in the Air Force oftentimes have important applications in the commercial sector as well. The ACS recently recognized the ML Directorate for the invention and development of a PBO. PBO belongs to a special family of polymers known for their high stability, flame resistance, abrasion resistance and outstanding tensile mechanical properties. Following PBO's development at ML, research on the materials processing technology of polymers continued for nearly 20 years before fabrication could begin on reproducible polymer products. Concurrent with ML's recognition, the ACS also recognized the Dow Chemical Company, which initially commercialized the technology, and Toyobo Co. Ltd., who partnered with Dow and is currently using PBO fibers for reinforcement in rubber products, tires, belts, hoses, plastics, concrete, cords, gaskets and abrasive materials. Heat and flame resistant working wear, ballistic flak vests, cut and abrasion-resistant safety gloves and safety shoes, active sportswear, racing wear and riders' suits, high performance sail cloth and protective cloth for firefighters are just some of the products currently being created with PBO fiber.